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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,154	01/12/2006	Jeffrey Thomas Carter	118989-05072263	3341
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JONES DAY 222 EAST 41ST ST NEW YORK, NY 10017			EXAMINER GILLESPIE, BENJAMIN	
			ART UNIT 1796	PAPER NUMBER
			MAIL DATE 12/10/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/540,154

Applicant(s)

CARTER ET AL.

Examiner

BENJAMIN J. GILLESPIE

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 14-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement, and whether any necessary experimentation is “undue”. Factors include, but are not limited to:

- (A) The breadth of the claims;
- (B) The amount of direction provided by the inventor
- (C) The existence of working examples
- (D) The level of one of ordinary skill;
- (E) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

2. Claims 14-19 are all directed towards the mechanical properties of the final polyurethane adhesive, however there is no upper limit for said properties and therefore it is difficult for one of ordinary skill in the art to definitively practice the claimed invention. Furthermore, based on the breadth of claim 1, the claimed adhesive is not even required to have covalently bonded fatty acid compounds as only the polyol is required to “comprise reaction residues.”

3. With this understanding, the examiner would like to point out that applicants' specification fails to further provide the required enablement for claims 14-19 since said specification only provides one working example which extends beyond the scope of what is limited by claim 1 (example 2 is comparative). What's more, it is noted that page 8 of applicants' specification discuss the claimed mechanical properties, however the teachings on page 8 also fail to teach an upper limit.
4. Although applicants have listed preferred reactants for the diol component of the polyester and polyisocyanate, there are various choices for fatty dimer acid which have not been narrowed by the claims or examples. Furthermore, as previously discussed, the claimed invention does not even require the fatty acid or fatty diols to be covalently bonded within the claimed adhesive. Therefore, based on the lack of direction for the reactants and the breadth of the claimed mechanical properties the quantity of experimentation required to make the claimed invention would be exceedingly high and therefore applicants are not properly enabled for current claims 14-19. *In re Wand*, 858 F.2d 731, 737, 8 USPQ 2d 1400, 1404 (Fed Cir 1988).
5. Claim 12 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.
6. Claim 12 is rejected because the language "in the form of terminal isocyanate groups" has not been properly supported by the instant specification. It is noted that isocyanate prepolymers may contain NCO groups at the terminal portions of the prepolymer, however applicants never discuss in said specification that the 12 to 30% NCO content is based solely on just those

terminal NCO groups, and therefore it is not clear if applicants were in possession of the currently claimed invention at the time of filing.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Firstly the language "reaction residues" render the claims indefinite because it is not clear what "residues" consists of and whether said residues are even required to be covalently bonded to the claimed polyol. Claim 4 is rejected because language consisting of:

said polyol comprises a dimer fatty reaction residue component, wherein greater than 60 wt% of said dimer fatty reaction residue component is derived from dimer fatty residues and 10 to 30 wt% by weight of said dimer fatty reaction residue component is derived from trimer fatty residues

8. Renders the claim indefinite because it is unclear if the "dimer fatty reaction residue component" is the same as the "reaction residues" listed in claim 1. Claims 6 and 8 are rejected because the term "essentially" is relative language; it should be noted said term is not the same as the phrase "consisting essentially of". Claim 12 is rejected because no units have been provided for the claimed NCO content, i.e. wt%, equivalent %. Claims 14-19 are rejected because the ranges are unworkable, the values have no upper limit and currently extend to infinity. Claims 23, 28, and 30 are rejected because the phrase "not more than 40% by weight" has not been given a relative basis, i.e. % wt based on the adhesive, the isocyanate, the polyol, etc.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1 and 3-23 are rejected under 35 U.S.C. 102(b) as anticipated by Saunders ('250). Saunders teach a moisture-curable wood adhesive comprising NCO-terminated prepolymer and residues of fatty acids, which is taken to satisfy the claimed "reaction residue of at least one... fatty acid." (Col 1 lines 10-17, col 9 lines 1-2). Said fatty acids may be either dimer or trimers, and are based on compounds such as linoleic acid, which has carbon number of 18 (Col 3 lines 14-16).
10. Claims 1 and 3-23 are rejected under 35 U.S.C. 102(b) as anticipated by Israel ('637). Israel teaches a moisture-curable wood adhesive comprising the reaction product of polyisocyanate and polyester polyol, wherein said polyester polyol is based on the reaction product of dimer and trimer fatty acids and ethylene or propylene glycol (Abstract; col2 lines 14-18, 29-42; col 4 lines 45-56).
11. Claims 1 and 3-6, 9-11, 13-23 are rejected under 35 U.S.C. 102(b) as anticipated by Trout ('232). Trout teaches a moisture-curable wood adhesive comprising an NCO-terminated prepolymer that is the reaction product of polyisocyanate and fatty acid based esters, wherein said fatty acid contains between 8 and 24 carbon atoms (Abstract; Col 2 lines 35-67). In particular, patentees explains the fatty acid comprises between 50-96 wt% and 4-35 wt% of dimer and trimer fatty acid respectively (Col 5 lines 40-45). Finally patentee explains that the adhesive may be applied in solution, which is taken to satisfy the "liquid" limitation of claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2 and 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saunders ('250). As previously discussed, Saunders teaches a moisture-curable wood adhesive, but fails to disclose what viscosity it has at room temperature. Nevertheless, it would have been obvious to arrive at applicants' claimed range since patentee teaches the adhesive may also comprise a solvent depending how it is applied to a substrate, and one of ordinary skill would understand that viscosity can be controlled by the amount of said solvent is added (Col 9 lines 5-6). Furthermore, the examiner would like to point out that applicants' claimed adhesive does not preclude the presence of solvent.
13. Claims 2 and 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Israel ('637). As previously discussed, Israel teaches a moisture-curable wood adhesive, but fails to disclose what viscosity it has at room temperature. Nevertheless, it would have been obvious to arrive at applicants' claimed range since patentee teaches the adhesive may be applied in solution, i.e. in solvent, and one of ordinary skill would understand that viscosity can be controlled by the amount of said solvent is added (Col 8 lines 60-63). Furthermore, the examiner would like to point out that applicants' claimed adhesive does not preclude the presence of solvent.

14. Claims 2 and 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trout ('232). As previously discussed, Trout teach a moisture-curable wood adhesive comprising a NCO-terminated prepolymer, however patentee fails to teach the claimed viscosity parameters. Nevertheless, depending on the type of application method of Trout, one would be motivated to lower the viscosity of the system, and said adhesive may be applied while in solution, i.e. in the presence of solvent. Therefore, it would have been obvious to arrive at the claimed viscosity parameters since motivation is based on application method and one of ordinary skill would have been easily able to modify the viscosity of Trout through the presence of solvent, and the claimed invention does not exclude the presence of solvent.

15. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trout ('232) in view of Israel ('637). As previously discussed, Trout teach NCO-terminated moisture-curable wood adhesive that is based on fatty acid based esters, wherein said ester is based on low molecular weight glycol, however, patentee fails to teach ethylene or propylene glycol.

16. As previously discussed, Israel also teach NCO-terminated moisture-curable wood adhesives based on fatty acid esters. In particular patentees teach that in addition to diethylene glycol, ethylene and propylene glycol are suitable polyol useful in synthesizing the relied upon ester (Col 4 lines 45-55). Therefore, it would have been obvious to substitute the diethylene glycol of Trout for the ethylene or propylene glycol of Israel since it is disclosed as being a suitable equivalent, and the mere substitution of an equivalent is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable, i.e. it would have been obvious. *In re Ruff* 118 USPQ 343 (CCPA 1958).

17. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Trout ('232) in view of Hammond ('530). As previously discussed, Trout teach NCO-terminated, moisture-curable wood adhesive, but patentee fails to teach the claimed NCO content.

18. Hammond teaches NCO-terminated, moisture-curable prepolymers that are useful as wood adhesives (Abstract; col 2 lines 25-38). In particular, patentees teach that the ideal NCO content for wooden substrates is as much as 20 wt%, which enhances adhesive strength and reflects a superior handling viscosity (Col 5 lines 32-48). Therefore, it would have been obvious to modify the adhesive of Trout so that it has an NCO content of 20 wt% since it would result in improved handling and performance properties.

Response to Arguments

19. Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

21. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin J. Gillespie whose telephone number is 571-272-2472. The examiner can normally be reached on 8am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

23. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rabon Sergent/
Primary Examiner, Art Unit 1796

B. Gillespie